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Nota di contenuto	Cover -- Title page -- Acknowledgements -- Chapter 1. Introduction -- 1.1. Littlewood identities -- 1.2. Outline -- Chapter 2. Macdonald-Koornwinder theory -- 2.1. Partitions -- 2.2. Generalised -shifted factorials -- 2.3. Rogers-Szego polynomials -- 2.4. Plethystic notation -- 2.5. Macdonald polynomials -- 2.6. Koornwinder polynomials -- 2.7. Macdonald-Koornwinder polynomials -- 2.8. Hall-Littlewood polynomials -- Chapter 3. Virtual Koornwinder integrals -- 3.1. Basic definitions -- 3.2. Closed-form evaluations-the Macdonald case -- 3.3. Closed-form evaluations-the Hall-Littlewood case -- Chapter 4. Bounded Littlewood identities -- 4.1. Statement of results -- 4.2. Proofs of Theorems 4.1-4.8 -- Chapter 5. Applications -- 5.1. Plane partitions -- 5.2. Character identities for affine Lie algebras -- 5.3.

Rogers-Ramanujan identities -- 5.4. Quadratic transformations for Kaneko-Macdonald-type basic hypergeometric series -- Chapter 6. Open problems -- 6.1. Missing q -analogues -- 6.2. Littlewood identities for near-rectangular partitions -- 6.3. Littlewood identities of Pfaffian type -- 6.4. Elliptic Littlewood identities -- 6.5. q , t - Littlewood-Richardson coefficients -- 6.6. Dyson-Macdonald-type identities -- Appendix A. The Weyl-Kac formula -- Appendix B. Limits of elliptic hypergeometric integrals -- Bibliography -- Back Cover.

Sommario/riassunto

"We describe a method, based on the theory of Macdonald-Koornwinder polynomials, for proving bounded Littlewood identities. Our approach provides an alternative to Macdonald's partial fraction technique and results in the first examples of bounded Littlewood identities for Macdonald polynomials. These identities, which take the form of decomposition formulas for Macdonald polynomials of type (R, S) in terms of ordinary Macdonald polynomials, are q , t -analogues of known branching formulas for characters of the symplectic, orthogonal and special orthogonal groups. In the classical limit, our method implies that MacMahon's famous ex-conjecture for the generating function of symmetric plane partitions in a box follows from the identification of $GL(n, R)$, $O(n)$ as a Gelfand pair. As further applications, we obtain combinatorial formulas for characters of affine Lie algebras; Rogers-Ramanujan identities for affine Lie algebras, complementing recent results of Griffin et al.; and quadratic transformation formulas for Kaneko-Macdonald-type basic hypergeometric series"--
